ST-3950

AEP Model

UK Model

FM STEREO/FM-AM TUNER

SPECIFICATIONS

GENERAL

Outputs:	FIXED: 750 mV, 10 kΩ VARIABLE: 0–1.5 V, 1.5 kΩ FM DISCRI: 150 mV, 2.5 kΩ
Power Requirements:	110, 127, 220 or 240 V ac selectable, 50/60 Hz
Power Consumption:	29 W (UK model) 27 W (AEP model)
Dimensions:	Approx. 460 (w) x 170 (h) x 335 (d) mm 18 1/8 (w) x 6 5/8 (h) x 13 (d) inches including projecting parts and controls
Weight:	Approx. 8.0 kg, 17 lb 10 oz (net) 9.8 kg, 21 lb 9 oz (in shipping carton)

FM SECTION

Tuning Range:	87.5 – 108 MHz
Antenna Terminals:	300 Ω balanced 75 Ω coaxial cable input
Intermediate Frequency:	10.7 MHz
Usable Sensitivity:	1.7 μV (MONO), IHF 1.5 μV, S/N = 26 dB (40 kHz deviation)
Sensitivity at 50 dB Quieting:	3.0 μV (MONO) 40 μV (STEREO)
Sensitivity at 46 dB Quieting (40 kHz deviation):	40 μV (STEREO)
Image Rejection:	80 dB
IF Rejection:	100 dB
Spurious Rejection:	90 dB
AM Suppression:	56 dB
Capture Ratio:	1.0 dB
Selectivity:	80 dB
S/N Ratio:	75 dB (MONO) 70 dB (STEREO)
Harmonic Distortion:	at 100 Hz, 1 kHz 0.15 % (MONO) 0.25 % (STEREO) at 10 kHz 0.2 % (MONO) 0.6 % (STEREO)
Stereo Separation:	35 dB at 100 Hz 40 dB at 1 kHz 35 dB at 10 kHz
Frequency Response:	40 Hz – 12.5 kHz $^{+0.3}_{-0.8}$ dB
19 kHz, 38 kHz Suppression:	60 dB
Muting Level:	Approx. 5 μV

AM SECTION

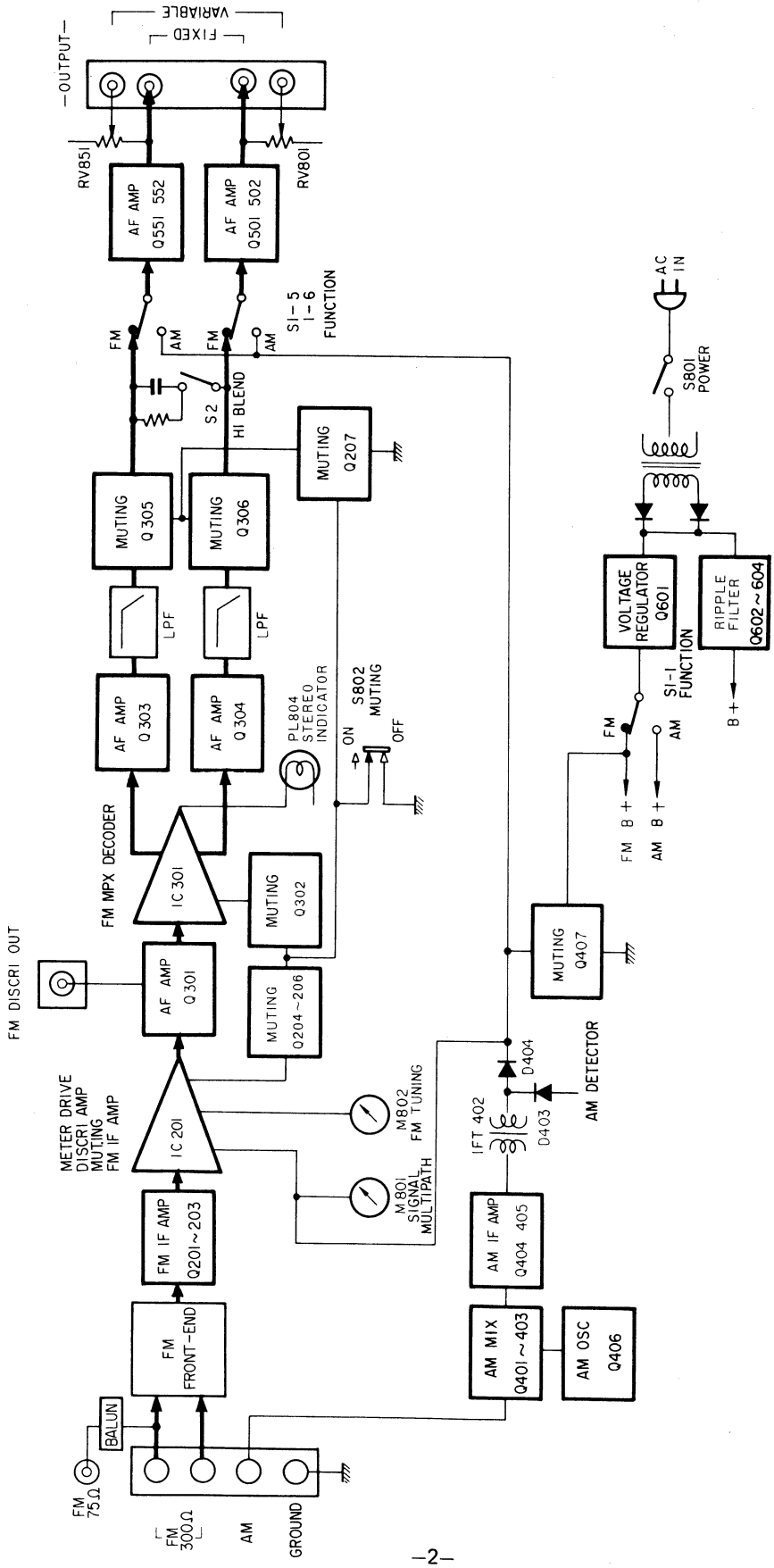
Tuning Range:	530 – 1,605 kHz
Antenna:	Buitl-in ferrite-rod antenna and external antenna terminal
Intermediate Frequency:	468 kHz
Usable Sensitivity:	250 μV/m built-in antenna 100 μV external antenna at 1,000 kHz
Image Rejection:	40 dB at 1,000 kHz
S/N Ratio:	50 dB at 50 mV/m
Harmonic Distortion:	0.5 % at 50 mV/m, 400 Hz
IF Rejection:	35 dB at 1,000 kHz

SONY®

SERVICE MANUAL

SECTION 1
OUTLINE

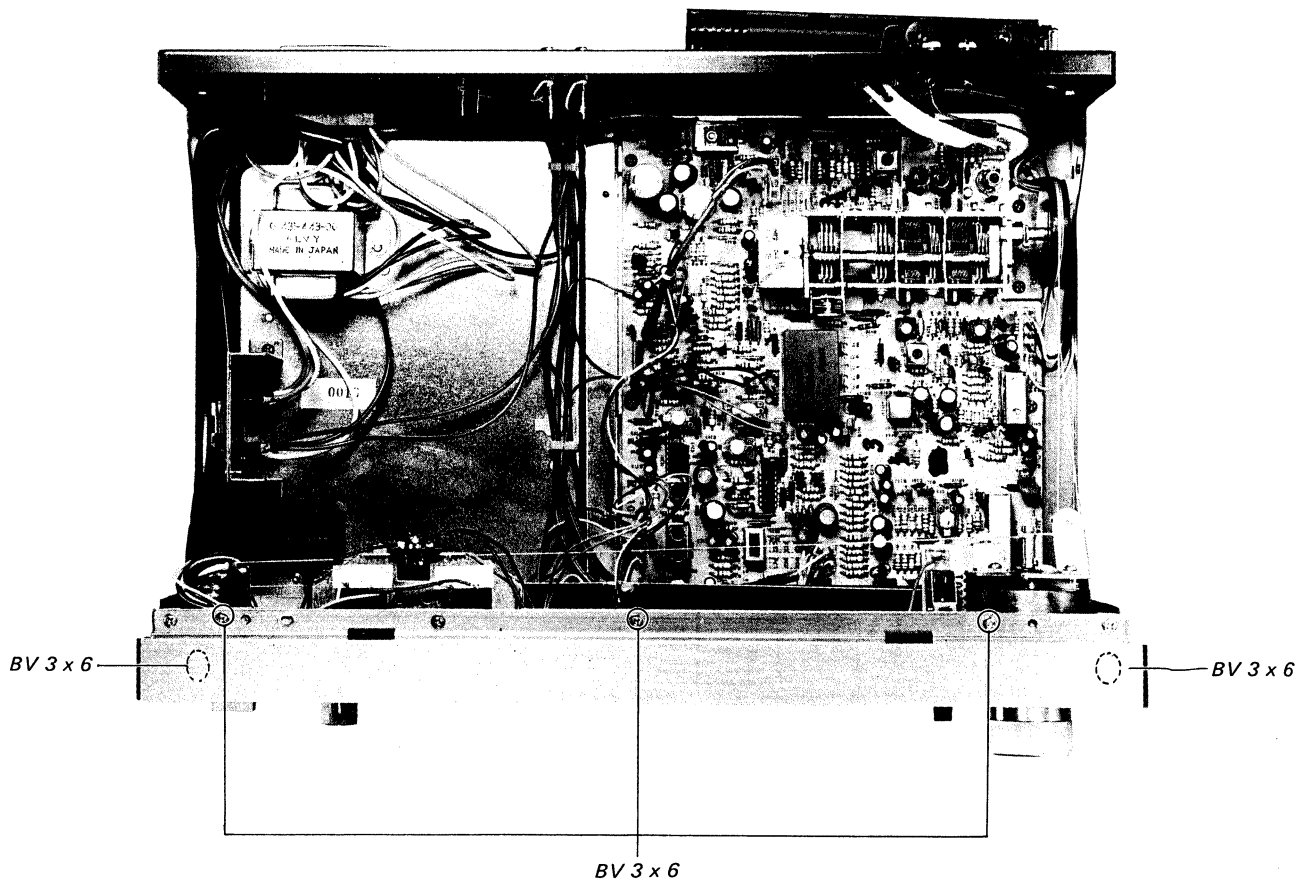
1-1. BLOCK DIAGRAM



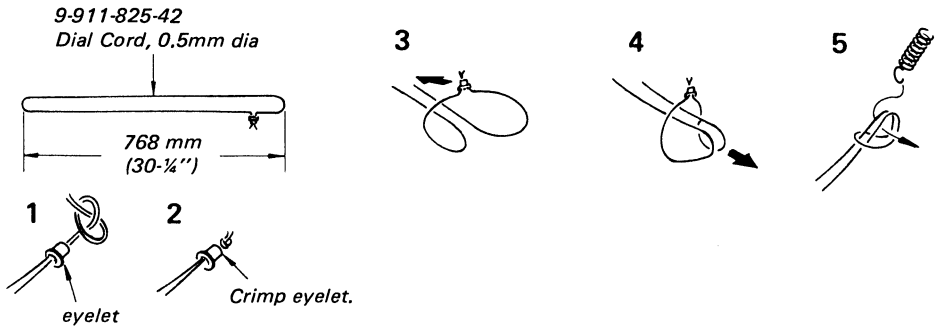
1-2. DISASSEMBLY

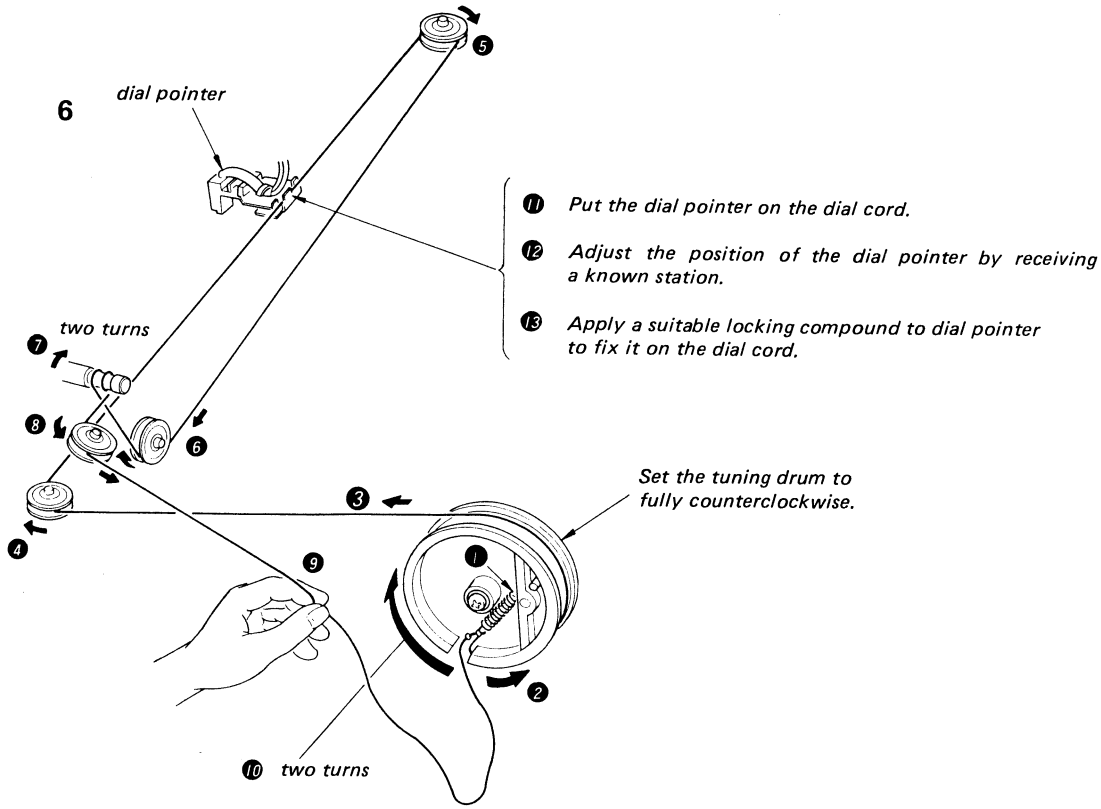
1) Top Cover
Remove four screws (±) BW 4 x 22 from both ornamental side boards. Remove both ornamental side boards and top cover.

2) Front Panel
Pull off FUNCTION and OUTPUT LEVEL knobs. Remove TUNING knob by loosening the knob screw.
Remove five screws BV 3 x 6 from top and both sides of the front panel.



1-3. DIAL CORD STRINGING




6
dial pointer
two turns
Set the tuning drum to fully counterclockwise.
⓫ Put the dial pointer on the dial cord.
⓬ Adjust the position of the dial pointer by receiving a known station.
⓭ Apply a suitable locking compound to dial pointer to fix it on the dial cord.
⓾ two turns

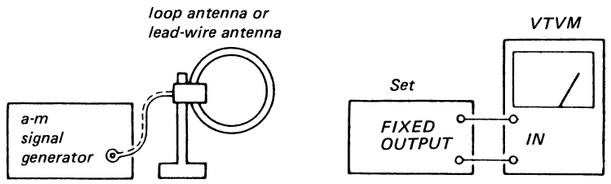
SECTION 2
ADJUSTMENTS

2-1. FM FREQUENCY COVERAGE AND TRACKING ADJUSTMENTS

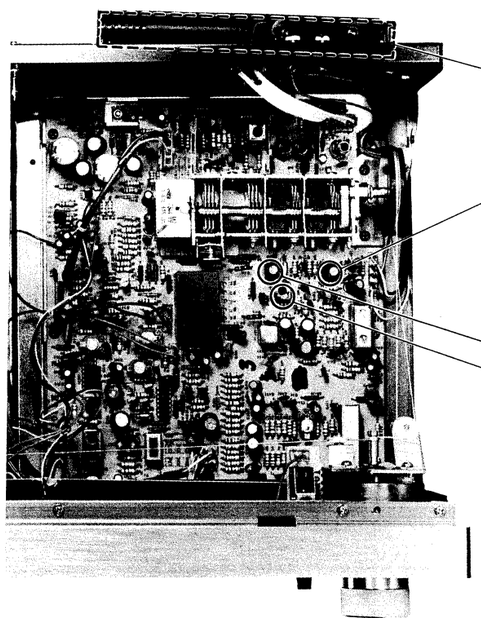
Never attempt alignment of the fm front-end section for the fm frequency coverage and tracking adjustment. If the fm frequency coverage adjustment is required, replace the fm front-end ass'y. In the case of tracking alignment, ask your nearest SONY Service Station to send your unit to the Factory Service Center.

2-2. AM FREQUENCY COVERAGE AND TRACKING ADJUSTMENTS

Test setup:



Adjust for maximun reading.



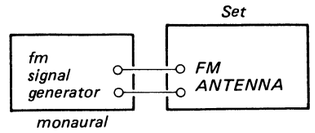
AM TRACKING	
L801	600kHz(modulated)
CT401	1,400kHz(modulated)

AM FREQUENCY COVERAGE	
CT402	1,605kHz(modulated)
L402	530kHz(modulated)

2-3. FM ADJUSTMENTS

SIGNAL METER ADJUSTMENT

Test setup:

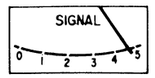


FM Signal Generator Setting:

Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

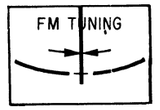
Tune the tuner to 98MHz and adjust RT202 for the pointer deflection of 4.6 (See figure below.) on the SIGNAL meter.



DISCRIMINATOR ALIGNMENT

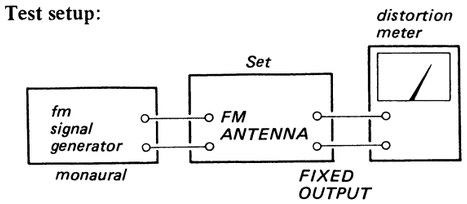
Procedure:

1. Detune the tuner.
2. Adjust the secondary-side core (blue) of IFT201 for zero center on the TUNING meter.



MONAURAL DISTORTION ADJUSTMENT

Test setup:



FM Signal Generator Setting:

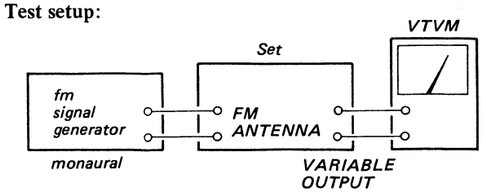
Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

Tune the tuner to 98MHz and adjust the primary-side core (black) of IFT201 for minimum reading on the distortion meter.

FM OUTPUT LEVEL ADJUSTMENT

Test setup:



FM Signal Generator Setting:

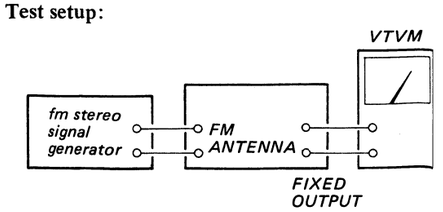
Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

Set OUTPUT LEVEL control to max and adjust RT201 for 1.6V (6dB) on the VTVM.

FM STEREO SEPARATION ADJUSTMENT

Test setup:



FM Stereo Signal Generator Setting:

Carrier frequency: 98 MHz
Mode: Stereo
Audio (400 Hz) Mod: 67.5 kHz (90 %)
Pilot (19 kHz) Mod: 7.5 kHz (10 %)

Procedure:

1. Tune th
2. Adjust VTVM level.
3. Record signal

Note:

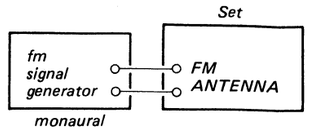
4. Measur
5. Readju left and

ST-3950

2-3. FM ADJUSTMENTS

SIGNAL METER ADJUSTMENT

Test setup:

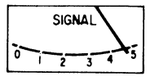


FM Signal Generator Setting:

Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

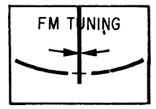
Tune the tuner to 98MHz and adjust RT202 for the pointer deflection of 4.6 (See figure below.) on the SIGNAL meter.



DISCRIMINATOR ALIGNMENT

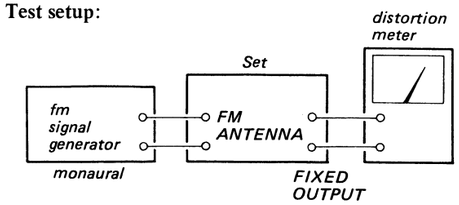
Procedure:

1. Detune the tuner.
2. Adjust the secondary-side core (blue) of IFT201 for zero center on the TUNING meter.



MONAURAL DISTORTION ADJUSTMENT

Test setup:



FM Signal Generator Setting:

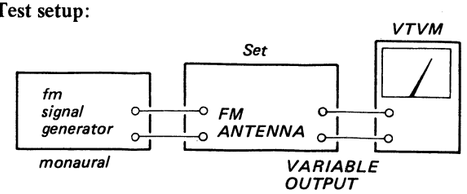
Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

Tune the tuner to 98MHz and adjust the primary-side core (black) of IFT201 for minimum reading on the distortion meter.

FM OUTPUT LEVEL ADJUSTMENT

Test setup:



FM Signal Generator Setting:

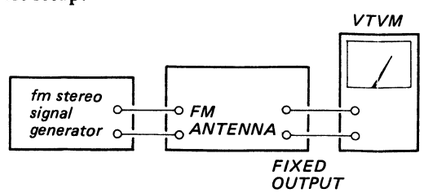
Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

Set OUTPUT LEVEL control to max and adjust RT201 for 1.6V (6dB) on the VTVM.

FM STEREO SEPARATION ADJUSTMENT

Test setup:



FM Stereo Signal Generator Setting:

Carrier frequency: 98 MHz
Mode: Stereo
Audio (400 Hz) Mod: 67.5 kHz (90 %)
Pilot (19 kHz) Mod: 7.5 kHz (10 %)

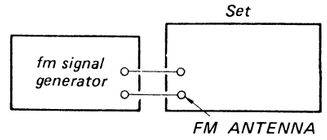
Procedure:

1. Tune the tuner to 98 MHz.
2. Adjust RT501 for maximum output on the VTVM at the left channel, and record the output level.
3. Record the residual signal level when the stereo signal generator input selector is to the right.

   Note: The output level to residual-level ratio represents the separation.
4. Measure the separation at the right channel.
5. Readjust RT501 for minimum difference between left and right channel separation.

MUTING ADJUSTMENT

Setup:

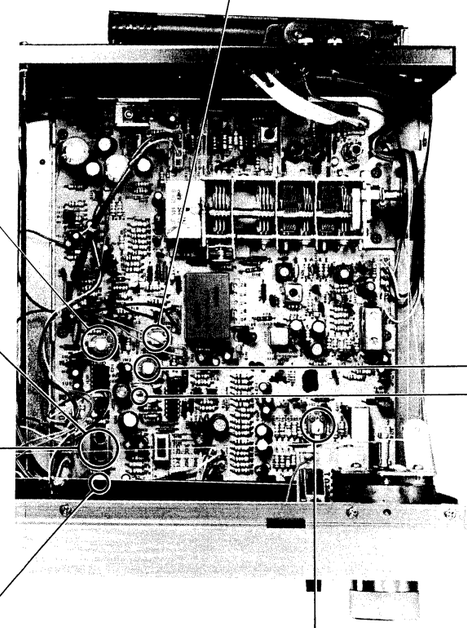


FM Signal Generator Setting:

Carrier frequency: 98 MHz
Modulation: 400 Hz,
75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

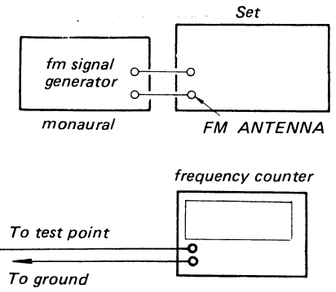
1. Turn the MUTING switch ON.
2. Adjust RT203 so that the muting circuit begins to operate at the symmetrical deflection point of TUNING meter when detuning the tuner to higher or lower frequencies than 98 MHz.



19 kHz ADJUSTMENT

A) With Frequency Counter

Setup:



FM Signal Generator Setting:

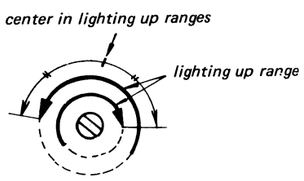
Carrier frequency: 98 MHz
Modulation: 400 Hz,
75 kHz deviation (100 %)
Output level: 1 mV (60 dB)

Procedure:

1. Tune the set to 98 MHz.
2. Adjust RT301 for 19kHz ± 100Hz on the counter.

B) Without Frequency Counter

1. Tune the set to FM stereo signals.
2. Turn RT301 clockwise or counterclockwise and secure RT301 at the center in lighting-up range of stereo lamp as shown below.



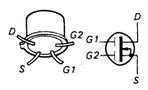
ST-3950 ST-3950

SECTION 3
DIAGRAMS

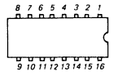
3-1. MOUNTING DIAGRAM

— Conductor Side —

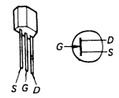
Q101: 3SK37



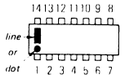
IC201: HA1137W



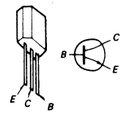
Q102, 105
305, 306: 2SK23A



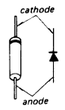
IC301: HA1156



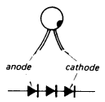
Q301, 303, 304
501, 502, 551
552: 2SC631A
Q401, 402, 404:
2SC403C
Q204~207, 302, 407
602~604, 701, 702:
2SC633A



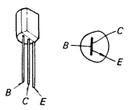
D202, 301, 304
401, 402, 701,
702: 1T40
D302, 303, 403,
404: 1T22A
D602, 603: 10E2



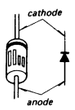
D201: MV203V



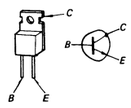
Q103, 104, 106,
201~203, 405
406: 2SC710



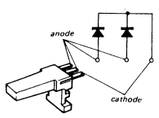
D601: EQA01-16R

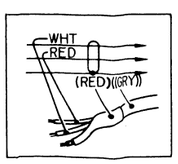


Q601: 2SC1060

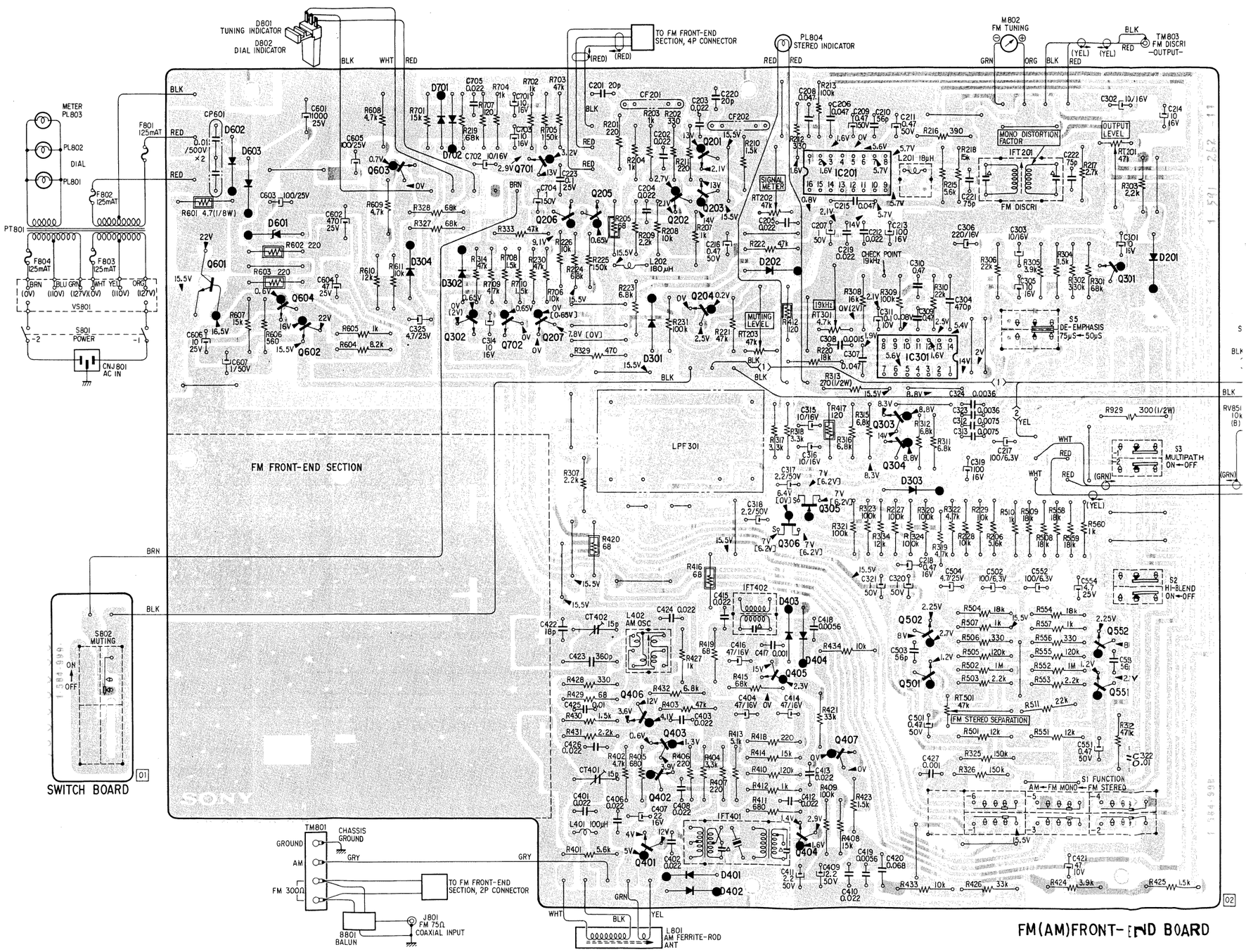


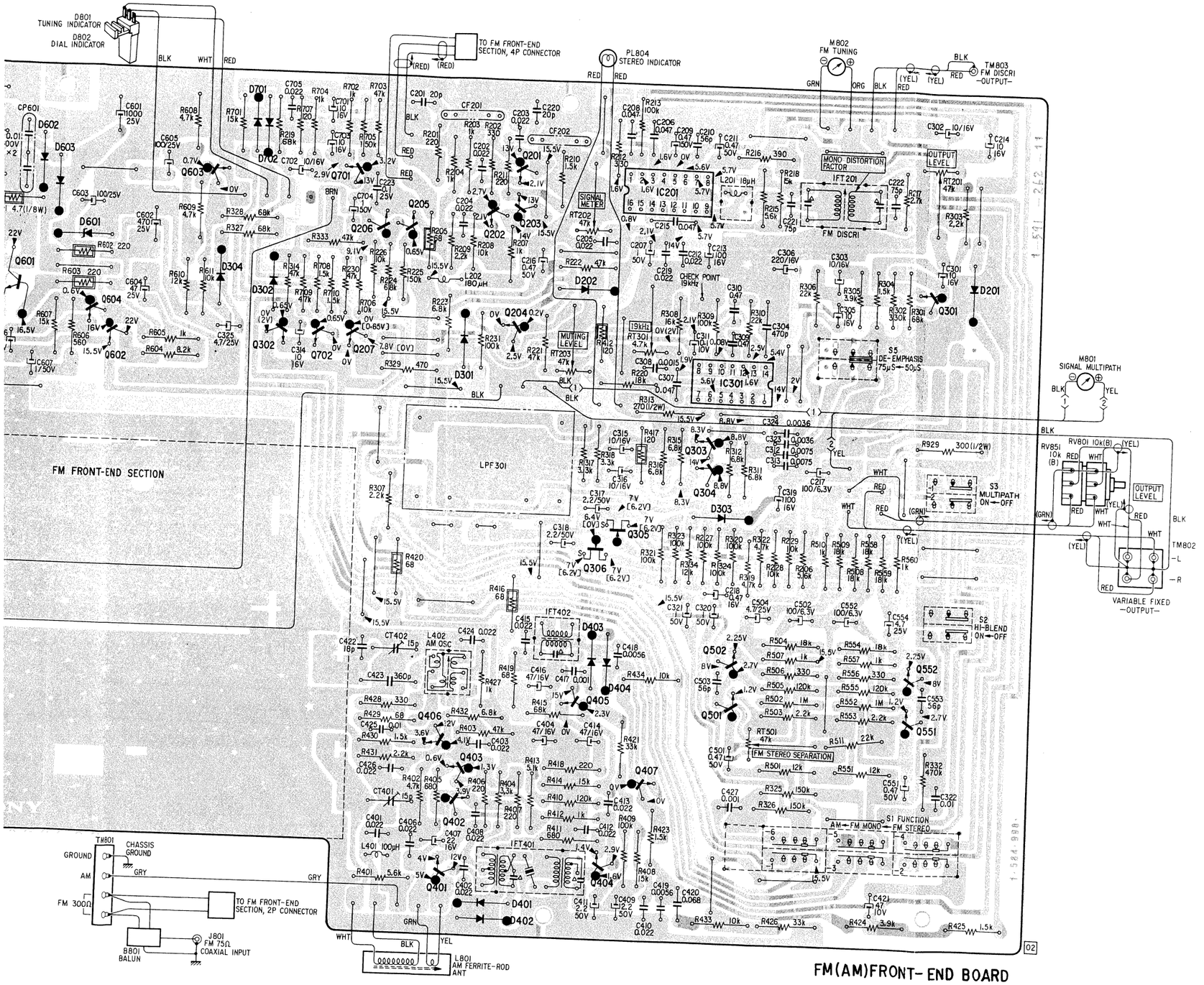
D801, 802: TX312





- : nonflammable resistor
- **B + pattern**

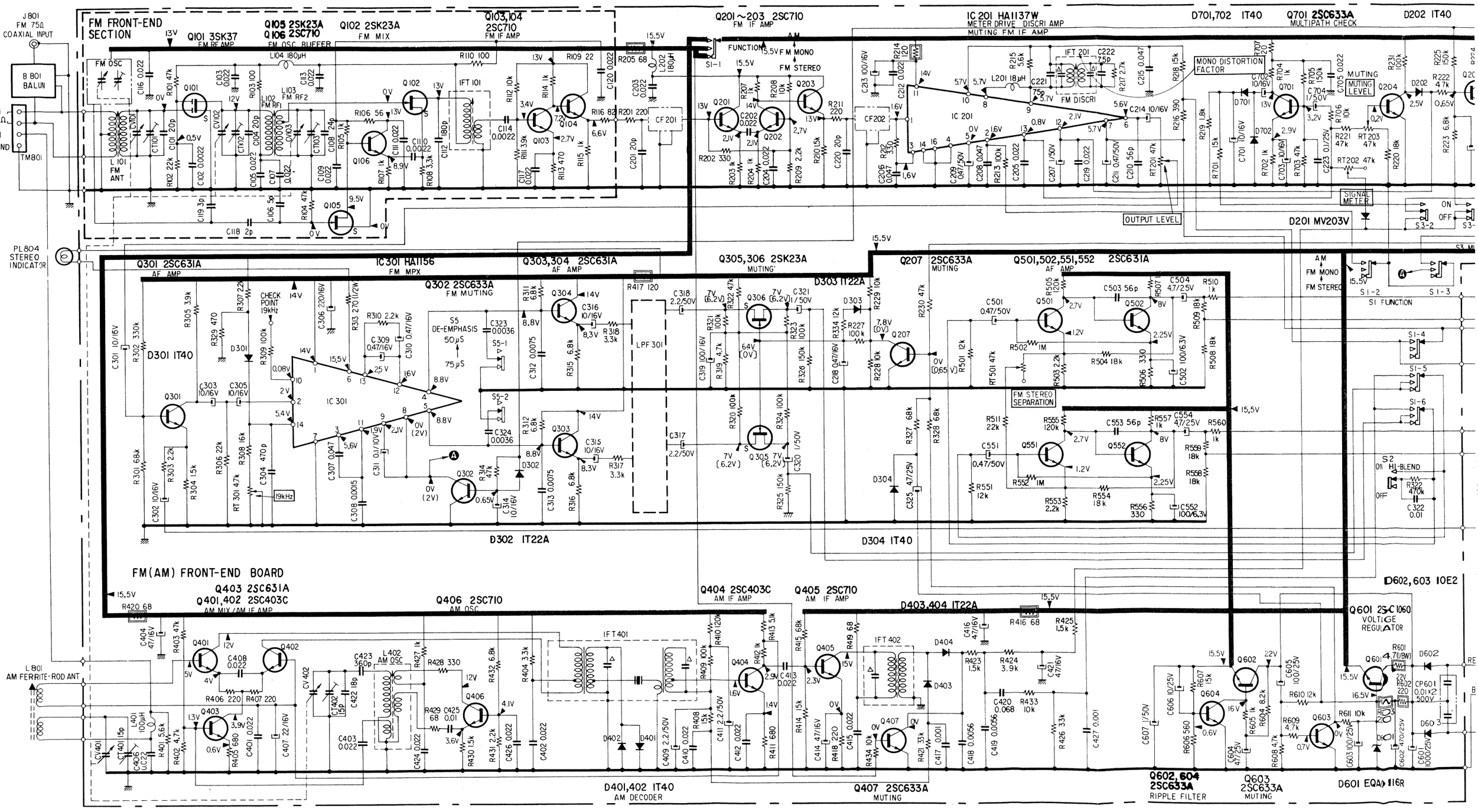


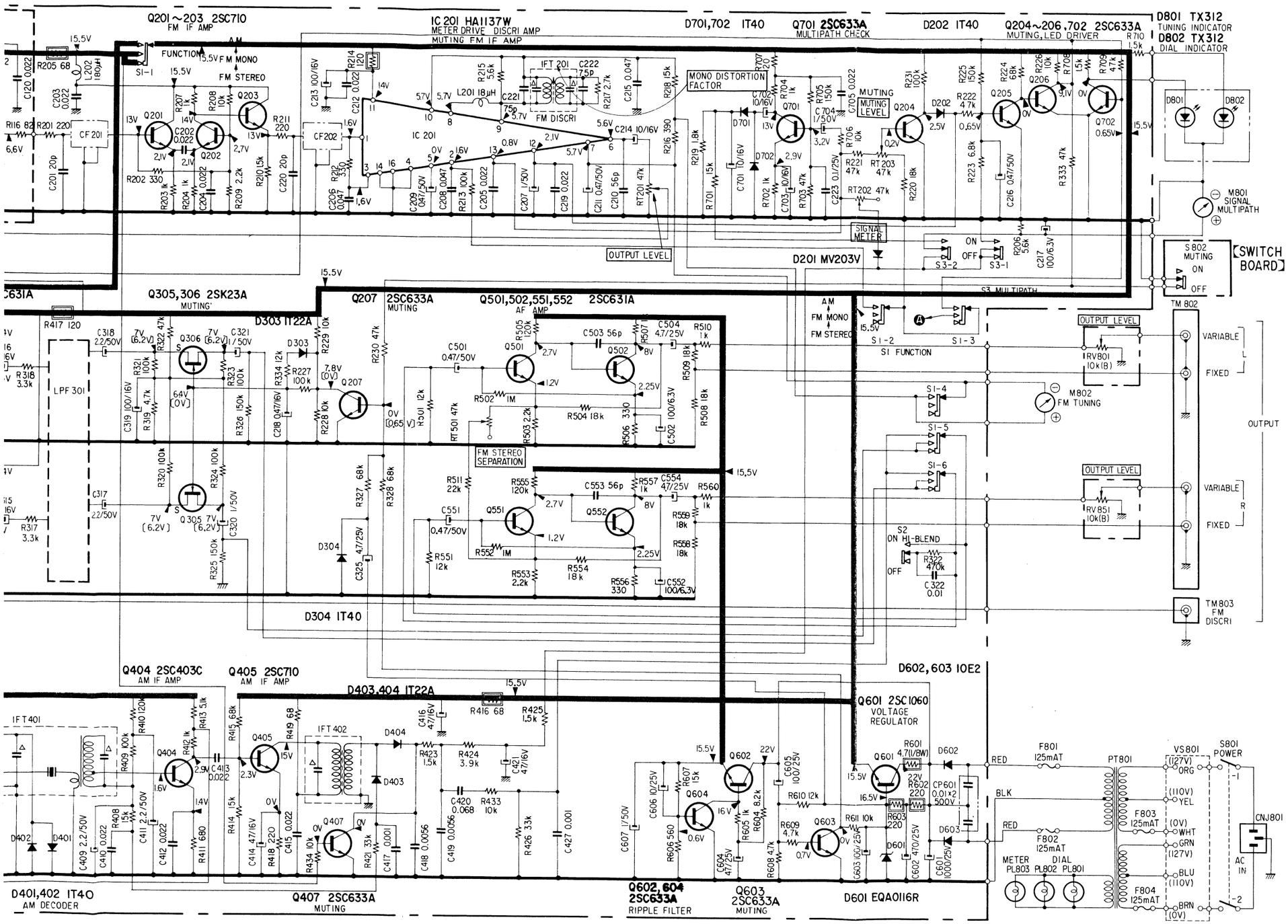


FM(AM)FRONT-END BOARD

Q,IC	D
	701 702
	603 602
201	
701	
IC201	
203	
202	
205 206	
603	
	601
	201
	302
301	202
601	304
604 302	
702 207	
204	
602	301
IC301	
303	
304	
	303
305	
306	
502	403 404
552	
405 501	
551	
406	
403	
407	
402	
404	
401	
	401
	402

3-2. SCHEMATIC DIAGRAM





Note:

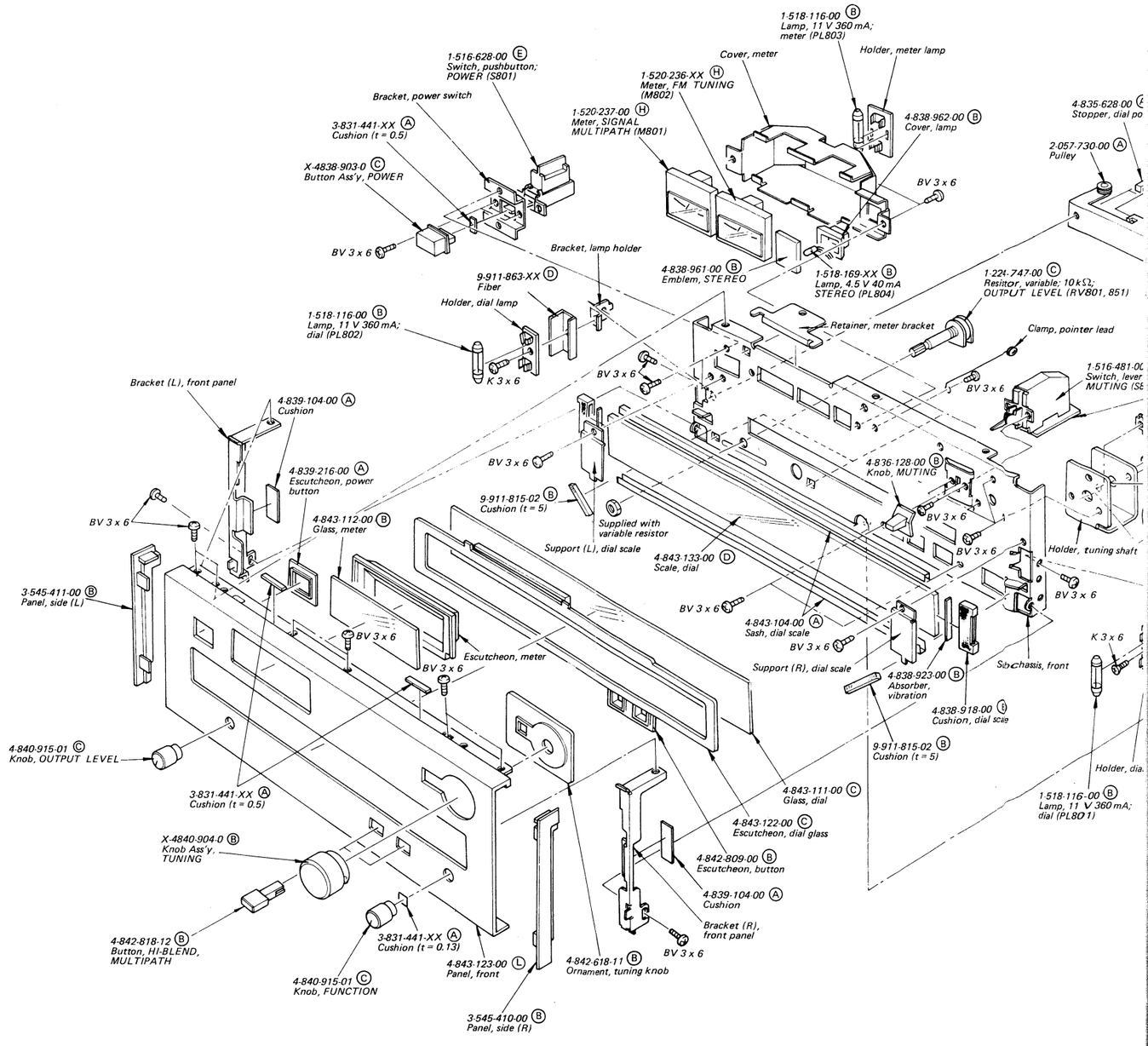
- All capacitors are in μF unless otherwise noted. 50 ro less working volts are omitted except for electrolytic type. p = μμF
- All resistors are in Ω, ¼W, unless otherwise noted. k = 1,000, M = 1,000k
- ▭ indicates nonflammable resistor.
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ━ indicates B+ circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20k Ω/V).
  no mark: common
  ( ): STEREO
  [ ]: MUTING ON
- Voltage variations may be noted due to normal production tolerances.
- Switch Model

Ref. No.	Switch	Position
S1-1 ~ 6	FUNCTION	FM STEREO
S2	HI-BLEND	OFF
S3-1, 2	MULTIPATH	OFF
S5	DE-EMPHASIS	50μS
S801	POWER	OFF
S802	MUTING	OFF

MEMO

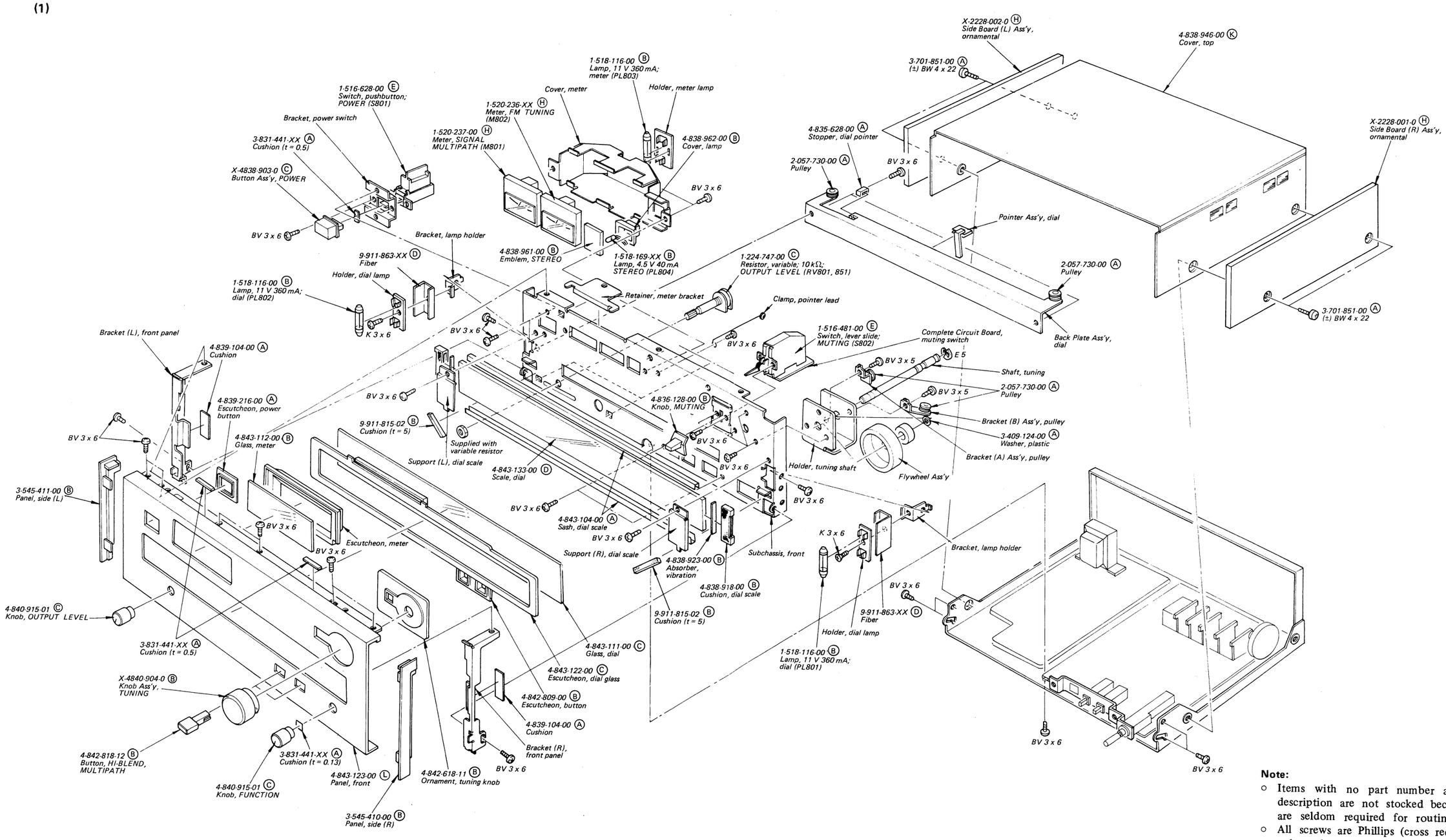
SECTION 4
EXPLODED VIEWS

(1)


1·518·116·00 (B) Lamp, 11 V 360 mA; meter (PL803)
Holder, meter lamp
Cover, meter
1·516·628·00 (E) Switch, pushbutton; POWER (S801)
1·520·236·XX (H) Meter, FM TUNING (M802)
Bracket, power switch
1·520·237·00 (H) Meter, SIGNAL MULTIPATH (M801)
4·838·962·00 (B) Cover, lamp
3·831·441·XX (A) Cushion (t = 0.5)
X·4838·903·0 (C) Button Ass'y, POWER
BV 3 x 6
4·835·628·00 (A) Stopper, dial po
2·057·730·00 (A) Pulley
Bracket, lamp holder
4·838·961·00 (B) Emblem, STEREO
1·518·169·XX (B) Lamp, 4.5 V 40 mA STEREO (PL804)
9·911·863·XX (D) Fiber
Holder, dial lamp
1·518·116·00 (B) Lamp, 11 V 360 mA; dial (PL802)
K 3 x 6
1·224·747·00 (C) Resistor, variable; 10 kΩ; OUTPUT LEVEL (RV801, 851)
Retainer, meter bracket
Clamp, pointer lead
1·516·481·00 Switch, lever MUTING (SE
Bracket (L), front panel
4·839·104·00 (A) Cushion
4·839·216·00 (A) Escutcheon, power button
4·836·128·00 (B) Knob, MUTING
9·911·815·02 (B) Cushion (t = 5)
Supplied with variable resistor
4·843·112·00 (B) Glass, meter
Support (L), dial scale
4·843·133·00 (D) Scale, dial
Holder, tuning shaft
3·545·411·00 (B) Panel, side (L)
4·843·104·00 (A) Sash, dial scale
Escutcheon, meter
Support (R), dial scale
Sub chassis, front
4·838·923·00 (B) Absorber, vibration
4·838·918·00 (I) Cushion, dial scale
9·911·815·02 (B) Cushion (t = 5)
Holder, dia.
4·840·915·01 (C) Knob, OUTPUT LEVEL
3·831·441·XX (A) Cushion (t = 0.5)
4·843·111·00 (C) Glass, dial
1·518·116·00 (B) Lamp, 11 V 360 mA; dial (PL801)
4·843·122·00 (C) Escutcheon, dial glass
X·4840·904·0 (B) Knob Ass'y, TUNING
4·842·809·00 (B) Escutcheon, button
4·839·104·00 (A) Cushion
Bracket (R), front panel
4·842·818·12 (B) Button, HI-BLEND, MULTIPATH
3·831·441·XX (A) Cushion (t = 0.13)
4·840·915·01 (C) Knob, FUNCTION
4·843·123·00 (L) Panel, front
4·842·618·11 (B) Ornament, tuning knob
3·545·410·00 (B) Panel, side (R)

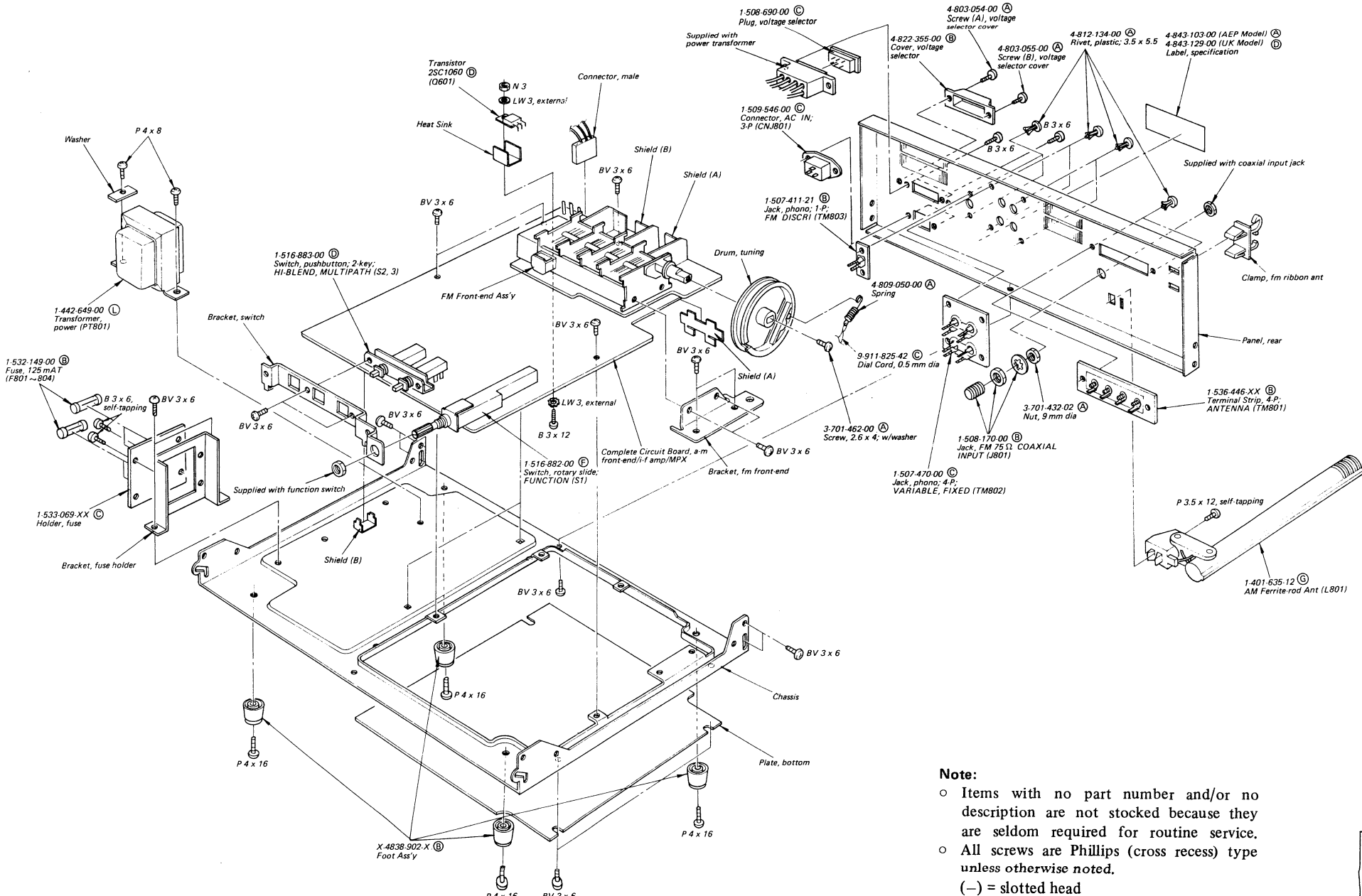
SECTION 4
EXPLODED VIEWS

(1)


X-2228-002-0 (H) Side Board (L) Ass'y, ornamental
4-838-946-00 (K) Cover, top
3-701-851-00 (A) (±) BW 4 x 22
1-518-116-00 (B) Lamp, 11 V 360 mA; meter (PL803)
Cover, meter
Holder, meter lamp
1-516-628-00 (E) Switch, pushbutton; POWER (S801)
1-520-236-XX (H) Meter, FM TUNING (M802)
Bracket, power switch
1-520-237-00 (H) Meter, SIGNAL MULTIPATH (M801)
4-838-962-00 (B) Cover, lamp
3-831-441-XX (A) Cushion (t = 0.5)
4-835-628-00 (A) Stopper, dial pointer
X-4838-903-0 (C) Button Ass'y, POWER
2-057-730-00 (A) Pulley
BV 3 x 6
Pointer Ass'y, dial
X-2228-001-0 (H) Side Board (R) Ass'y, ornamental
Bracket, lamp holder
9-911-863-XX (D) Fiber
Holder, dial lamp
1-518-116-00 (B) Lamp, 11 V 360 mA; dial (PL802)
K 3 x 6
4-838-961-00 (B) Emblem, STEREO
1-518-169-XX (B) Lamp, 4.5 V 40 mA STEREO (PL804)
1-224-747-00 (C) Resistor, variable; 10 kΩ; OUTPUT LEVEL (RV801, 851)
Retainer, meter bracket
Clamp, pointer lead
Back Plate Ass'y, dial
Bracket (L), front panel
4-839-104-00 (A) Cushion
1-516-481-00 (E) Switch, lever slide; MUTING (S802)
Complete Circuit Board, muting switch
E 5
BV 3 x 5
Shaft, tuning
4-839-216-00 (A) Escutcheon, power button
4-836-128-00 (B) Knob, MUTING
2-057-730-00 (A) Pulley
9-911-815-02 (B) Cushion (t = 5)
Supplied with variable resistor
Bracket (B) Ass'y, pulley
4-843-112-00 (B) Glass, meter
3-409-124-00 (A) Washer, plastic
Support (L), dial scale
4-843-133-00 (D) Scale, dial
Bracket (A) Ass'y, pulley
Holder, tuning shaft
Flywheel Ass'y
3-545-411-00 (B) Panel, side (L)
4-843-104-00 (A) Sash, dial scale
Escutcheon, meter
Support (R), dial scale
Subchassis, front
4-838-923-00 (B) Absorber, vibration
4-838-918-00 (B) Cushion, dial scale
4-840-915-01 (C) Knob, OUTPUT LEVEL
9-911-815-02 (B) Cushion (t = 5)
9-911-863-XX (D) Fiber
Holder, dial lamp
1-518-116-00 (B) Lamp, 11 V 360 mA; dial (PL801)
3-831-441-XX (A) Cushion (t = 0.5)
4-843-111-00 (C) Glass, dial
4-843-122-00 (C) Escutcheon, dial glass
X-4840-904-0 (B) Knob Ass'y, TUNING
4-842-809-00 (B) Escutcheon, button
4-839-104-00 (A) Cushion
Bracket (R), front panel
4-842-818-12 (B) Button, HI-BLEND, MULTIPATH
3-831-441-XX (A) Cushion (t = 0.13)
4-840-915-01 (C) Knob, FUNCTION
4-843-123-00 (L) Panel, front
4-842-618-11 (B) Ornament, tuning knob
3-545-410-00 (B) Panel, side (R)

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European models only.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European models only.

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European models only.

SECTION 5
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q101		Ⓔ 3SK37
Q102		Ⓒ 2SK23A
Q103, 104		Ⓑ 2SC710
Q105		Ⓒ 2SK23A
Q106		Ⓑ 2SC710
Q201 ~ 203		Ⓑ 2SC710
⇒Q204 ~ 207		Ⓑ 2SC634A
⇒Q301		Ⓑ 2SC632
⇒Q302		Ⓑ 2SC634A
⇒Q303, 304		Ⓑ 2SC632
Q305, 306		Ⓒ 2SK23A
Q401, 402		Ⓑ 2SC403C
⇒Q403		Ⓑ 2SC632
Q404		Ⓑ 2SC403C
Q405, 406		Ⓑ 2SC710
Q407		Ⓑ 2SC634A
Q501, 551		Ⓑ 2SC632A
Q502, 552		
Q601		Ⓓ 2SC1060
Q602 ~ 604		Ⓑ 2SC634A
Q701, 702		Ⓑ 2SC634A
		ICs
IC201		Ⓗ HA1137W
IC301		Ⓙ HA1156
		Diodes
D201		MV203V
⇒D202		Ⓑ 1S1555
⇒D301		Ⓑ 1S1555
D302, 303		1T22A
⇒D304		Ⓑ 1S1555
⇒D401, 402		Ⓑ 1S1555
D403, 404		Ⓑ 1T22A
D601		Ⓑ EQA0116R
D602, 603		Ⓑ 10E2
⇒D701, 702		Ⓑ 1S1555
D801, 802		Ⓗ TX312

⇒ Due to replacement parts, the values are different from the diagrams.

Ref. No.	Part No.	Description
		COILS
L101	1-401-662-00	Ⓑ FM Antenna
L102	1-425-925-00	Ⓑ FM RF
L103	1-425-926-00	Ⓑ FM RF
L104	1-407-172-XX	Ⓐ Microinductor, 180μH
L201	1-459-152-00	Ⓑ Microinductor, 18μH
L202	1-407-172-XX	Ⓐ Microinductor, 180μH
L401	1-407-169-XX	Ⓐ Microinductor, 100μH
L402	1-405-656-00	Ⓑ AM Osc
L801	1-401-635-12	Ⓖ AM Ferrite-rod Ant
		TRANSFORMERS
B801	1-417-014-21	Ⓐ Balun
IFT101	1-403-295-00	Ⓑ FM IFT
IFT201	1-404-029-00	Ⓒ FM Discriminator
IFT401	1-404-014-21	Ⓓ AM IFT
IFT402	1-403-149-00	Ⓑ AM IFT
PT801	1-442-649-00	Ⓛ Power
		FILTERS
CF201, 202	1-527-248-00	Ⓗ Ceramic, 10.7 MHz
LPF301	1-231-219-00	Ⓓ Low-pass
		CAPACITORS

All capacitors are in μF and of ceramic unless otherwise noted.
(p = μμF, elect = electrolytic)
50 or less working volts are omitted except for electrolytic type.

C101	1-101-981-11	Ⓐ 20p
C102	1-102-257-11	Ⓐ 0.0022
C103	1-101-924-11	Ⓐ 0.022
C104	1-101-981-11	Ⓐ 20p
C105	1-101-924-11	Ⓐ 0.022
C106	1-102-864-11	Ⓐ 5p
C107	1-101-924-51	Ⓐ 0.022
C108	1-102-642-11	Ⓐ 24p
C109	1-101-924-11	Ⓐ 0.022
C110	1-101-919-11	Ⓐ 0.0022
C111	1-101-924-11	Ⓐ 0.022
C112	1-102-848-11	Ⓐ 180p
C113	1-101-924-11	Ⓐ 0.022
C114	1-101-919-11	Ⓐ 0.0022
C116, 117	1-101-924-11	Ⓐ 0.022

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European models only.

Ref. No.	*Part No.*	*Description*		
C118	1-102-406-11	Ⓐ 2p		
C119	1-102-503-11	Ⓐ 3p		
C120	1-101-924-11	Ⓐ 0.022		
C201	1-101-974-11	Ⓐ 20p		
C202 ~205	1-101-924-11	Ⓐ 0.022		
C206	1-101-925-11	Ⓐ 0.047		
C207	1-121-391-11	Ⓐ 1	50V	elect
C208	1-101-925-11	Ⓐ 0.047		
C209	1-121-726-11	Ⓐ 0.47	50V	elect
C210	1-101-884-11	Ⓐ 56p		
C211	1-121-726-11	Ⓐ 0.47	50V	elect
C212	1-101-924-11	Ⓐ 0.022		
C213	1-121-415-11	Ⓐ 100	16V	elect
C214	1-121-651-11	Ⓐ 10	16V	elect
C215	1-101-925-11	Ⓐ 0.047		
C216	1-121-726-11	Ⓐ 0.47	50V	elect
C217	1-121-413-11	Ⓐ 100	6.3V	elect
C218	1-127-204-11	Ⓑ 0.47	16V	solid aluminum
C219	1-101-924-11	Ⓐ 0.022		
C220	1-101-974-11	Ⓐ 20p		
C221, 222	1-102-732-11	Ⓐ 75p		
C223	1-161-038-11	Ⓐ 0.1	25V	ceramic (boundary layer)
C301 ~303	1-121-651-11	Ⓐ 10	16V	elect
C304	1-103-717-11	Ⓐ 470p		polystyrol
C305	1-121-651-11	Ⓐ 10	16V	elect
C306	1-121-421-11	Ⓑ 220	16V	elect
C307	1-108-246-12	Ⓐ 0.047		mylar
C308	1-108-228-12	Ⓐ 0.0015		mylar
C309, 310	1-127-204-11	Ⓑ 0.47	16V	solid aluminum
C311	1-127-019-11	Ⓐ 0.1	10V	solid aluminum
C312, 313	1-106-022-12	Ⓐ 0.0075		mylar
C314 ~316	1-121-651-11	Ⓐ 10	16V	elect
C317, 318	1-121-450-11	Ⓐ 2.2	50V	elect
C319	1-121-415-11	Ⓐ 100	16V	elect
C320, 321	1-121-391-11	Ⓐ 1	50V	elect
C322	1-108-239-12	Ⓐ 0.01		mylar
C323, 324	1-108-568-12	Ⓐ 0.0036		mylar
C325	1-121-395-11	Ⓐ 4.7	25V	elect
C401 ~403	1-101-924-11	Ⓐ 0.022		
C404	1-121-409-11	Ⓐ 47	16V	elect
C406	1-101-924-11	Ⓐ 0.022		
C407	1-121-479-11	Ⓐ 22	16V	elect
C408	1-101-924-11	Ⓐ 0.022		

Ref. No.	*Part No.*	*Description*		
C409	1-121-450-11	Ⓐ 2.2	50V	elect
C410	1-101-924-11	Ⓐ 0.022		
C411	1-121-450-11	Ⓐ 2.2	50V	elect
C412, 413	1-101-924-11	Ⓐ 0.022		
C414	1-121-409-11	Ⓐ 47	16V	elect
C415	1-101-924-11	Ⓐ 0.022		
C416	1-121-409-11	Ⓐ 47	16V	elect
C417	1-108-227-12	Ⓐ 0.001		mylar
C418, 419	1-108-355-12	Ⓐ 0.0056		mylar
C420	1-108-249-12	Ⓐ 0.068		mylar
C421	1-121-352-11	Ⓐ 47	10V	elect
C422	1-102-953-11	Ⓐ 18p		
C423	1-103-714-11	Ⓐ 360p	50V	polystyrol
C424	1-101-924-11	Ⓐ 0.022		
C425	1-108-239-12	Ⓐ 0.01		mylar
C426	1-101-924-11	Ⓐ 0.022		
C427	1-108-227-12	Ⓐ 0.001		mylar
C501, 551	1-121-726-11	Ⓐ 0.47	50V	elect
C502, 552	1-121-413-11	Ⓐ 100	6.3V	elect
C503, 553	1-101-884-11	Ⓐ 56p		
C504, 554	1-121-395-11	Ⓐ 4.7	25V	elect
C601	1-123-066-11	Ⓑ 1000	25V	elect
C602	1-121-940-11	Ⓑ 470	25V	elect
C603	1-121-416-11	Ⓐ 100	25V	elect
C604	1-121-410-11	Ⓑ 47	25V	elect
C605	1-121-416-11	Ⓐ 100	25V	elect
C606	1-121-398-11	Ⓐ 10	25V	elect
C607	1-121-391-11	Ⓐ 1	50V	elect
C701 ~703	1-121-651-11	Ⓐ 10	16V	elect
C704	1-121-391-11	Ⓐ 1	50V	elect
C705	1-101-924-11	Ⓐ 0.022		
CP601	1-102-355-11	Ⓐ (0.01	500V) x 2	
CT401, 402	1-141-147-11	Ⓐ Trimmer, 15p		

RESISTORS

All resistors are in ohms. Regular-type ¼W carbon resistors are omitted.
Check the schematic diagram for the resistance values.
k = 1000, M = 1000k

R205	1-211-518-11	Ⓐ 68	¼W	carbon (nonflammable)
R214	1-211-524-11	Ⓐ 120	¼W	carbon (nonflammable)

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European models only.

Ref. No.	*Part No.*	*Description*		
R313	1-202-559-11	Ⓐ 270	½W	composition
R416	1-211-518-11	Ⓐ 68	¼W	carbon (nonflammable)
R417	1-211-524-11	Ⓐ 120	¼W	carbon (nonflammable)
R420	1-211-518-11	Ⓐ 68	¼W	carbon (nonflammable)
R601	1-211-401-11	Ⓐ 4.7	1/8W	composition (nonflammable)
R602, 603	1-211-538-11	Ⓐ 470	¼W	carbon (nonflammable)
RT201~203	1-224-647-XX	Ⓑ 47k		adjustable
RT301	1-224-644-XX	Ⓑ 4.7k		adjustable
RT501	1-224-647-XX	Ⓑ 47k		adjustable
RV801, 851	1-224-747-00	Ⓒ 10k		variable, OUTPUT LEVEL

SWITCHES

S1	1-516-882-00	Ⓕ Rotary Slide, FUNCTION
S2, 3	1-516-883-00	Ⓓ Pushbutton, 2-key; HI-BLEND, MULTIPATH
S5	1-513-298-00	Ⓑ Slide, de-emphasis
S801	1-516-628-00	Ⓔ Pushbutton, POWER
S802	1-516-481-00	Ⓔ Lever Slide, MUTING

MISCELLANEOUS

CNJ801	1-509-546-00	Ⓒ Connector, AC IN; 3-p
F801, 802	1-532-275-00	Ⓑ Fuse, 125mAT (AEP model)
	1-532-275-31	Ⓑ Fuse, 125mAT (UK model)
F803~804	1-532-149-00	Ⓑ Fuse, 125mAT
J801	1-508-170-00	Ⓑ Jack, FM 75Ω COAXIAL INPUT
M801	1-520-237-00	Ⓗ Meter, SIGNAL/MULTIPATH
M802	1-520-236-XX	Ⓗ Meter, FM TUNING
PL801~803	1-518-116-00	Ⓑ Lamp, 11V 360mA; dial, meter
PL804	1-518-169-XX	Ⓑ Lamp, 4.5V 40mA; STEREO
TM801	1-536-446-XX	Ⓑ Terminal Strip, 4-p; ANTENNA
TM802	1-507-470-00	Ⓒ Jack, phono; 4-p; VARIABLE, FIXED
TM803	1-507-411-21	Ⓑ Jack, phono; 1-p; FM DISCRI
	1-508-690-00	Ⓒ Plug, voltage selector
	1-533-069-XX	Ⓒ Holder, fuse

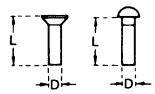
ACCESSORIES AND PACKING MATERIALS

Part No.	*Description*
X-4490-002-2	Ⓑ Cloth Ass'y, polishing
1-501-161-00	Ⓕ Ribbon Antenna, fm
1-508-482-00	Ⓒ Plug, coaxial input jack
1-534-049-61	Ⓔ Cord, connection; RK-74
1-534-819-11	Ⓔ Cord, power (UK Model)
3-429-126-00	Ⓑ Bag, polyethylene
3-780-851-11	Ⓑ Manual, instruction
4-838-952-00	Ⓒ Cushion
4-843-134-00	Ⓕ Carton

HARDWARE NOMENCLATURE

Screw:

– P 3 x 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only.*
  Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

FM STEREO/FM-AM TUNER

ST-3950

AEP Model

Serial No. 507,401 and later

UK Model

Serial No. 602,301 and later

SUPPLEMENT

No. 1
July, 1977

This supplement updates the service manual to include the production changes of the fuses on the secondary winding.
File this supplement with the service manual.

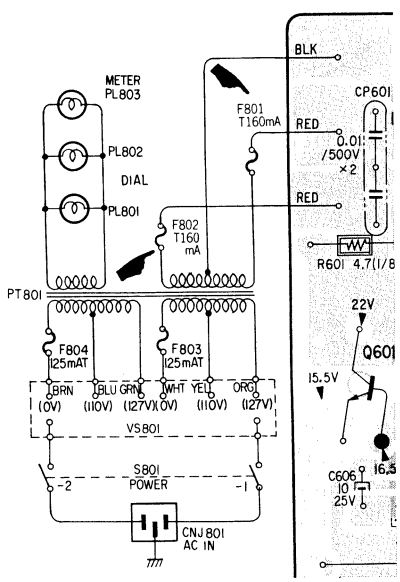
1. ELECTRICAL PARTS LIST

Ref. No.	FORMER		NEW	
	Part No.	*Description*	*Part No.*	*Description*
F801, 802	1-532-149-00	Ⓑ Fuse, 125mAT	1-532-275-00	Ⓑ Fuse, T160mA (AEP model) Serial No. 507,401 and later
			1-532-275-31	Ⓑ Fuse, T160mA (UK model) Serial No. 602,301 and later

2. MOUNTING DIAGRAM

(Refer to page 8 on the service manual.)

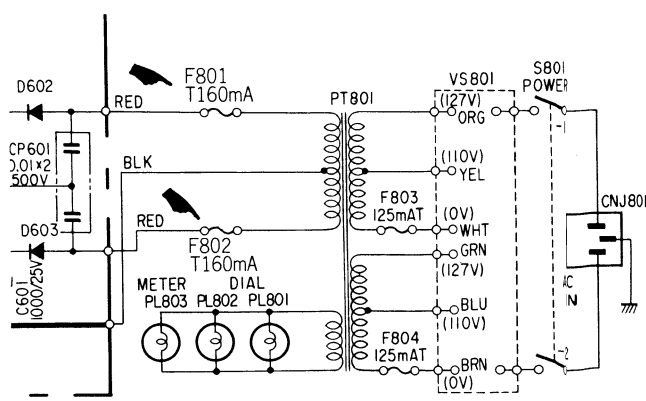
☛ : changed portion



3. SCHEMATIC DIAGRAM

(Refer to page 13 on the service manual.)

☛ : changed portion

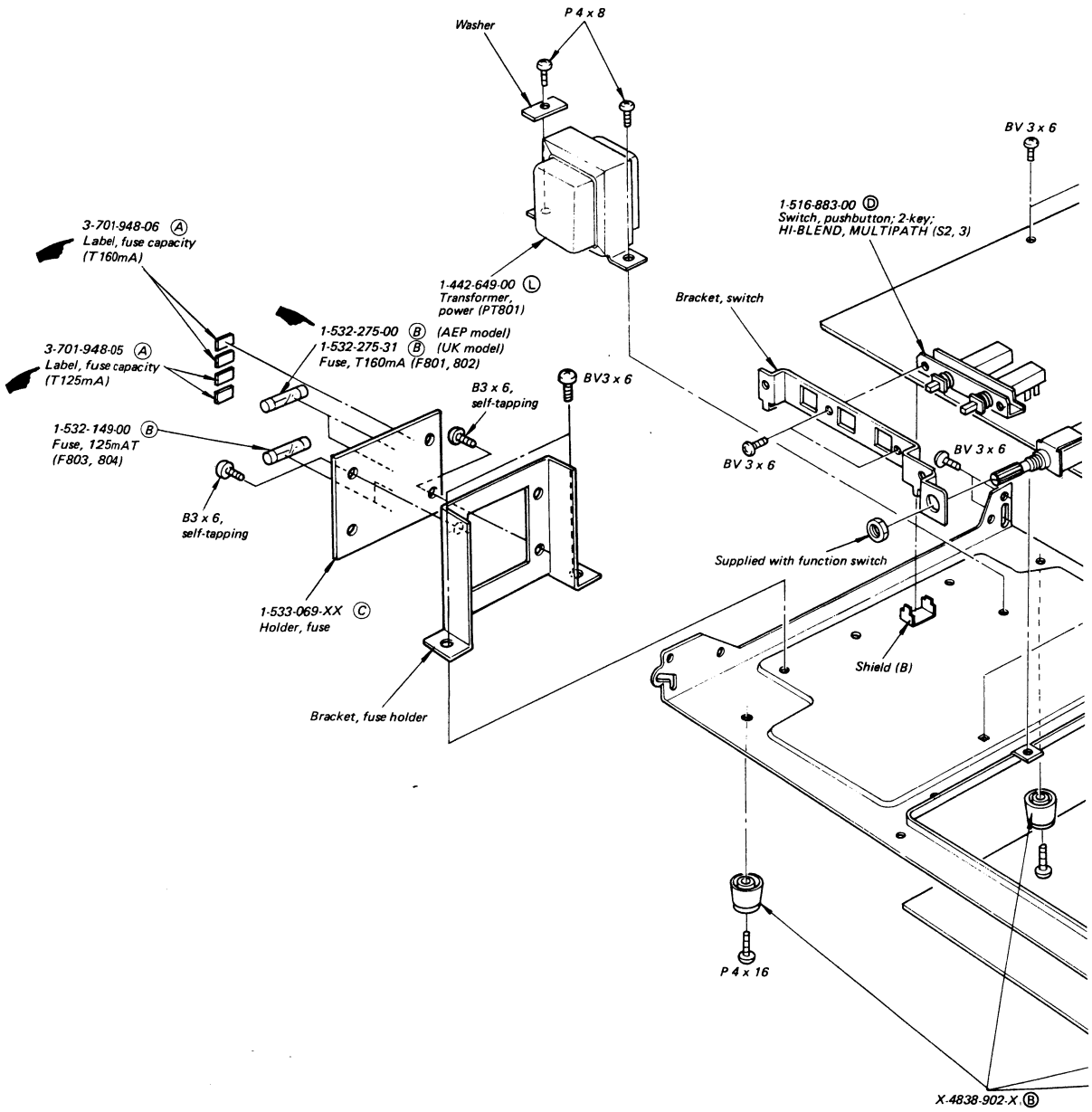


SONY®
SERVICE MANUAL

4. EXPLODED VIEW

(Refer to page 17 on the service manual.)

☛ : changed portion



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